

FEATURES

- ULTRA HIGH CURRENT (UP TO 33.4 AMPS)
- SURFACE MOUNTABLE CONSTRUCTION
- INDUCTANCE VALUES UP TO 1,400 μ H
- TAPED AND REELED FOR AUTOMATIC INSERTION
- FOR USE IN DC/DC CONVERTERS, STEPDOWN CONVERTERS

**RoHS
Compliant**
includes all homogeneous materials

*See Part Number System for Details



CHARACTERISTICS

Case Size	NPI31P	NPI52P	NPI53P	NPI55P
Inductance Range	0.33 ~ 4.7 μ H	0.78 ~ 1,000 μ H	15 ~ 1,400 μ H	2.8 ~ 10 μ H
Ambient Operating Temperature Range	-40°C ~ +85°C			
Maximum Component Temperature (Ambient + Self-Heating)	+125°C			
Temperature Rise at Irms	40°C max.			
Inductance Change at Isat	-10% typical			
Inductance Tolerance	20% (M), 10% (K)			
Resistance to Solder Heat	260°C for 10 seconds			

PART NUMBER SYSTEM

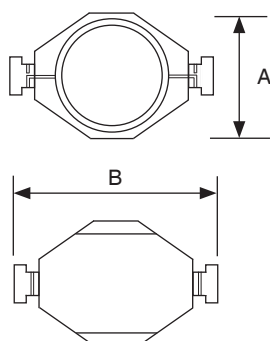
NPI 31 P 4R7 M TR F

- Series
- Size Code (see table for details)
- Construction Code (see drawing for details)
- Inductance Code (μ H): 1st two digits are significant, R is decimal point, 3rd digit is multiplier for values from 10 μ H and up.
- Inductance Tolerance Code: M=±20%
- Packaging: TR = Tape & Reel
- Termination Finish: F = RoHS Compliant

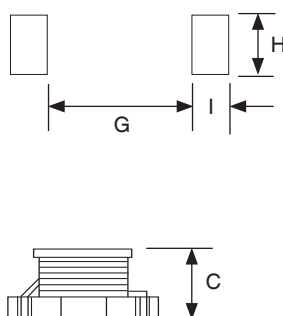
DIMENSIONS (mm)

Series	A	B	C	G (Ref)	H (Ref)	I (Ref)
NPI31P	9.9*	13.2*	6.4*	8.6*	4.1*	1.6*
NPI52P	15.2*	18.5*	8.0*	14.0*	6.4*	1.9*
NPI53P	15.2	18.5	12.0	14.0	6.4	1.9
NPI55P	16.3	22.4	12.0	14.3	11.9	3.2

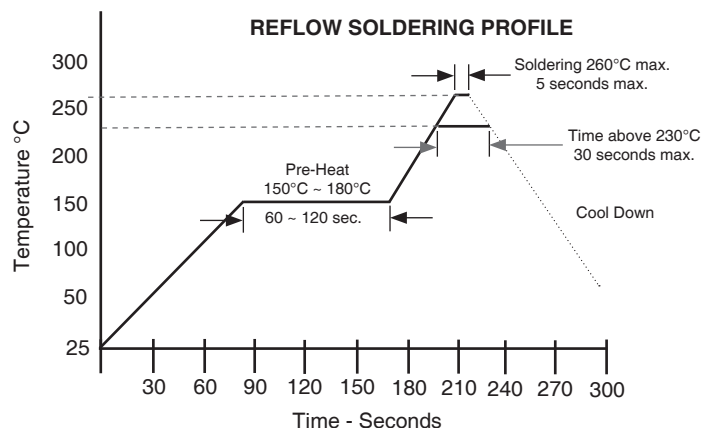
CONSTRUCTION



LAND PATTERN



REFLOW SOLDERING PROFILE



*Specifications reflect recent product changes. For more information refer to PCN announcement [\[Link\]](#)

Part Number	STANDARD VALUES - CASE SIZE 31 (13.2 x 9.9 x 6.4mm*)					
	Inductance Value (μH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI31PR12MTRF	0.12 ± 20%	380	0.0015	17	28	100KHz
NPI31PR33MTRF	0.33 ± 20%	300	0.002	16	20	
NPI31PR68MTRF	0.68 ± 20%	200	0.005	12	13	
NPI31P1R0MTRF	1.0 ± 20%	100	0.012	10	11	
NPI31P1R5MTRF	1.5 ± 20%	90	0.008	9.0	9.0	
NPI31P2R2MTRF	2.2 ± 20%	90	0.011	7.4	7.8	
NPI31P2R7MTRF	2.7 ± 20%	65	0.012	6.6	7.0	
NPI31P3R3MTRF	3.3 ± 20%	65	0.014	5.9	6.4	
NPI31P4R7MTRF	4.7 ± 20%	45	0.018	4.8	5.4	

Maximum +40°C temperature rise at Irms. Typical -10% inductance change at Isat.

Part Number	STANDARD VALUES - CASE SIZE 52 (18.5 x 15.2 x 8.00mm*)					
	Inductance Value (μH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI52PR78MTRF	0.78 ± 20%	156	0.0026	15	30	100KHz
NPI52P1R5MTRF	1.5 ± 20%	100	0.004	15	25	
NPI52P2R2MTRF	2.2 ± 20%	60	0.006	12	20	
NPI52P3R3MTRF	3.3 ± 20%	55	0.0086	10	17	
NPI52P3R9MTRF	3.9 ± 20%	35	0.01	9	15	
NPI52P4R7MTRF	4.7 ± 20%	35	0.014	8.4	13	
NPI52P6R0MTRF	6.0 ± 20%	35	0.017	7.5	12	
NPI52P7R8MTRF	7.8 ± 20%	28	0.018	7.5	11	
NPI52P100MTRF	10 ± 20%	28	0.026	6	10	
NPI52P150MTRF	12 ± 20%	26	0.028	5.2	8.5	
NPI52P150MTRF	15 ± 20%	20	0.032	4.4	8	
NPI52P220MTRF	22 ± 20%	20	0.047	3.5	7	1KHz
NPI52P330MTRF	33 ± 20%	15	0.066	3	5.5	
NPI52P470MTRF	47 ± 20%	9	0.086	2.6	4.5	
NPI52P680MTRF	68 ± 20%	8	0.13	2.3	3.5	
NPI52P101MTRF	100 ± 20%	7	0.19	1.8	3	
NPI52P151MTRF	150 ± 20%	6	0.25	1.5	2.6	
NPI52P221MTRF	220 ± 20%	5	0.38	1.2	2.4	
NPI52P331MTRF	330 ± 20%	4	0.56	1	1.9	
NPI52P471MTRF	470 ± 20%	3	0.85	0.82	1.4	
NPI52P681MTRF	680 ± 20%	2.5	1.1	0.72	1.2	
NPI52P102MTRF	1000 ± 20%	2.0	1.8	0.56	1	

Maximum +40°C temperature rise at Irms. Typical -10% inductance change at Isat.

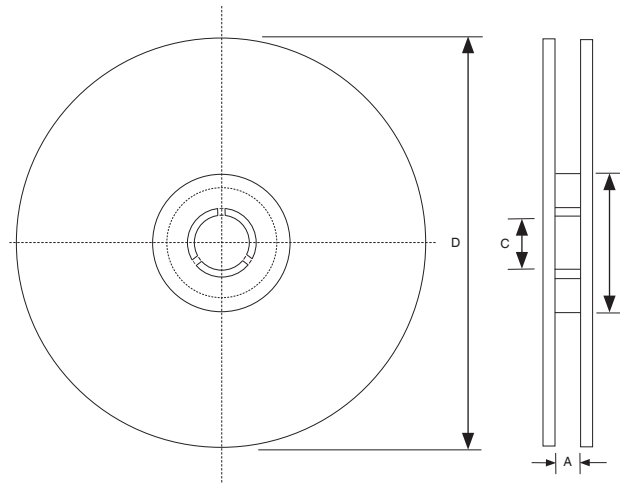
Part Number	STANDARD VALUES - CASE SIZE 50 (18.5 x 15.2 x 12.00mm)					
	Inductance Value (μH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI53P150MTRF	15 ± 20%	18	0.02	6.5	13.8	1KHz
NPI53P180MTRF	18 ± 20%	16	0.022	6	13.2	
NPI53P220MTRF	22 ± 20%	16	0.024	5.7	11.8	
NPI53P330MTRF	33 ± 20%	13	0.037	4.5	9.6	
NPI53P470MTRF	47 ± 20%	8	0.052	3.7	7.8	
NPI53P680MTRF	68 ± 20%	7	0.067	3.4	6.7	
NPI53P101MTRF	100 ± 20%	6	0.115	2.8	5.6	
NPI53P331KTRF	330 ± 10%	3	0.325	1.5	3	
NPI53P681KTRF	680 ± 10%	2	0.178	1.1	2	
NPI53P142KTRF	1400 ± 10%	1	1.3	0.7	1.5	

Maximum +40°C temperature rise at Irms. Typical -10% inductance change at Isat.

Part Number	STANDARD VALUES - CASE SIZE 54 (22.4 x 16.3 x 12.00mm)					
	Inductance Value (μH)	SRF (Typical) MHz	DC Resistance (Ω)	DC Current Irms (Amps)	DC Current Isat (Amps)	Test Frequency
NPI55P2R8MTRF	2.8 ± 20%	65	0.005	12.1	33.4	100KHz
NPI55P3R9MTRF	3.9 ± 20%	40	0.006	11.2	26.8	
NPI55P6R8MTRF	6.8 ± 20%	30	0.009	9.6	22.5	
NPI55P100MTRF	10 ± 20%	22	0.011	8.6	17.8	1KHz
NPI55P120MTRF	12 ± 20%	21	0.013	7.4	15.9	

Maximum +40°C temperature rise at Irms. Typical -10% inductance change at Isat.

Tape Width	REEL DIMENSIONS (mm)			
	A(mm)	B(mm)	C(mm)	D(mm)
24mm	24.5±0.1	100 ± 1.0	13.0 ± 0.5	330
32mm	32.5±0.1			



Size	REEL QUANTITY PER CASE SIZE			
	NPI31P	NPI52P	NPI53P	NPI55P
Quantity per reel	600	250	175	175
Tape Width	24mm	32mm	32mm	44mm

Case Size	TAPING DIMENSIONS (mm)									
	Ao ± 0.1	Bo ± 0.1	Co	D	E + 0.1/-0	Ko ± 0.1	P ± 0.1	Po ± 0.1	W ± 0.3	t ± 0.05
NPI31P	10.0	13.5	11.5 ± 0.1	1.5 ± 0.05	1.75	5.6	4.0	16.0	24	0.4
NPI52P	16.5	23.0	14.2 ± 0.15	1.5 ± 0.1	1.75	7.5	4.0	20.0	32	0.4
NPI53P	15.4	18.8	14.2 ± 0.15	1.5 ± 0.1	1.75	12.5	4.0	24.0	32	0.5
NPI55P	16.5	22.7	20.2 ± 0.15	1.5 ± 0.1	1.75	12.5	4.0	24.0	44	0.5

